

For our Environment

Umwelt 
Bundesamt

**Symposium on Sound Management and Economic Competitiveness
in the field of WEEE – Sharing European and Japanese experiences
in Tokyo, 12 November 2015**

**“German government policy of Resource
efficiency (Circular Economy) and recent
topics focusing on WEEE in Germany”**

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Section III 1.6 – Extended Producer Responsibility
German Environment Agency - UBA

Outline

- 1. Resource efficiency**
- 2. Waste management and circular economy**
- 3. WEEE management**
 - a) Collection**
 - b) Treatment and recycling**

The German Environment Agency - UBA

For our environment

Providing scientific support and policy advice for the German Ministry for the Environment



Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety

Gathering and assessing data on the state of the environment

Informing the public on environmental issues

**Umwelt
Bundesamt**

Enforcing environmental law

- Scientific agency.
- About 1,500 employees.
- Headquarter in Dessau-Rosslau.

Photo: German Environment Agency in Dessau. Copyright: Linnart Unger



I. G 7 and Resource Efficiency

G7 summit in Elmau (Germany) on 7/8 June 2015 **Leaders Declaration**

- **Recognition** of high importance of the protection and efficient use of natural resources
- **Continue ambitious action** to improve resource efficiency, building on, e.g., the Kobe 3R Action Plan
- **Mandate to International Resource Panel**
to prepare synthesis report on potentials of resource efficiency and promising solutions (by 2016)
- **G7 Alliance on Resource Efficiency**
Forum to exchange best practices in collaboration with business and other stakeholders
 - First Meeting on 2 October 2015 in Berlin under German presidency
 - Workshops in Birmingham (UK) and Berlin (DE) in October and November
 - Presidency 2016: Japan

I. Resource Efficiency Strategies in Germany

National Sustainability Strategy (2002)

- Confirmed by all governments.
- Quantitative targets:

Raw material productivity:
1994 → 2020: + 100%

- Status 2013: + 48 %



ProgRess (2012) German Resource Efficiency Programme

- 5 strategic approaches, i.a.
 - raising resource efficiency in **production**
 - making **consumption** more resource-efficient
 - enhancing resource-efficient **closed cycle management**



ProgRess II ... is in progress

- Draft published
- Status quo of resource efficiency in Germany
- Progress made in 2012-2015
- Update of the programme for 2016-2019

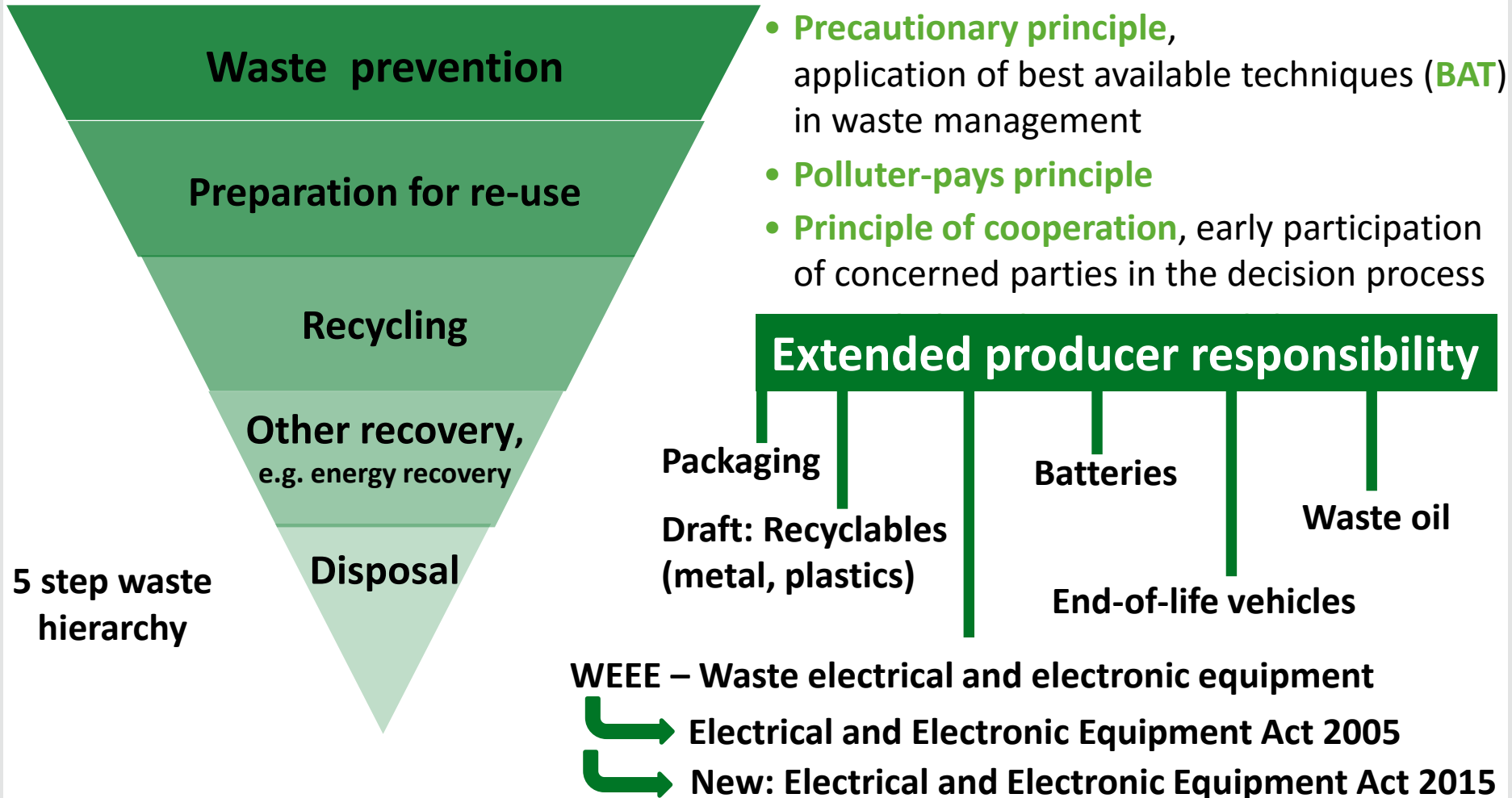
Draft ProgRess II
BMUB August 2015

Deutsches Ressourceneffizienzprogramm (ProgRess) II:
Fortschrittsbericht 2012 – 2015 und
Fortschreibung 2016 – 2019
Programm zur nachhaltigen Nutzung und zum Schutz der natürlichen Ressourcen

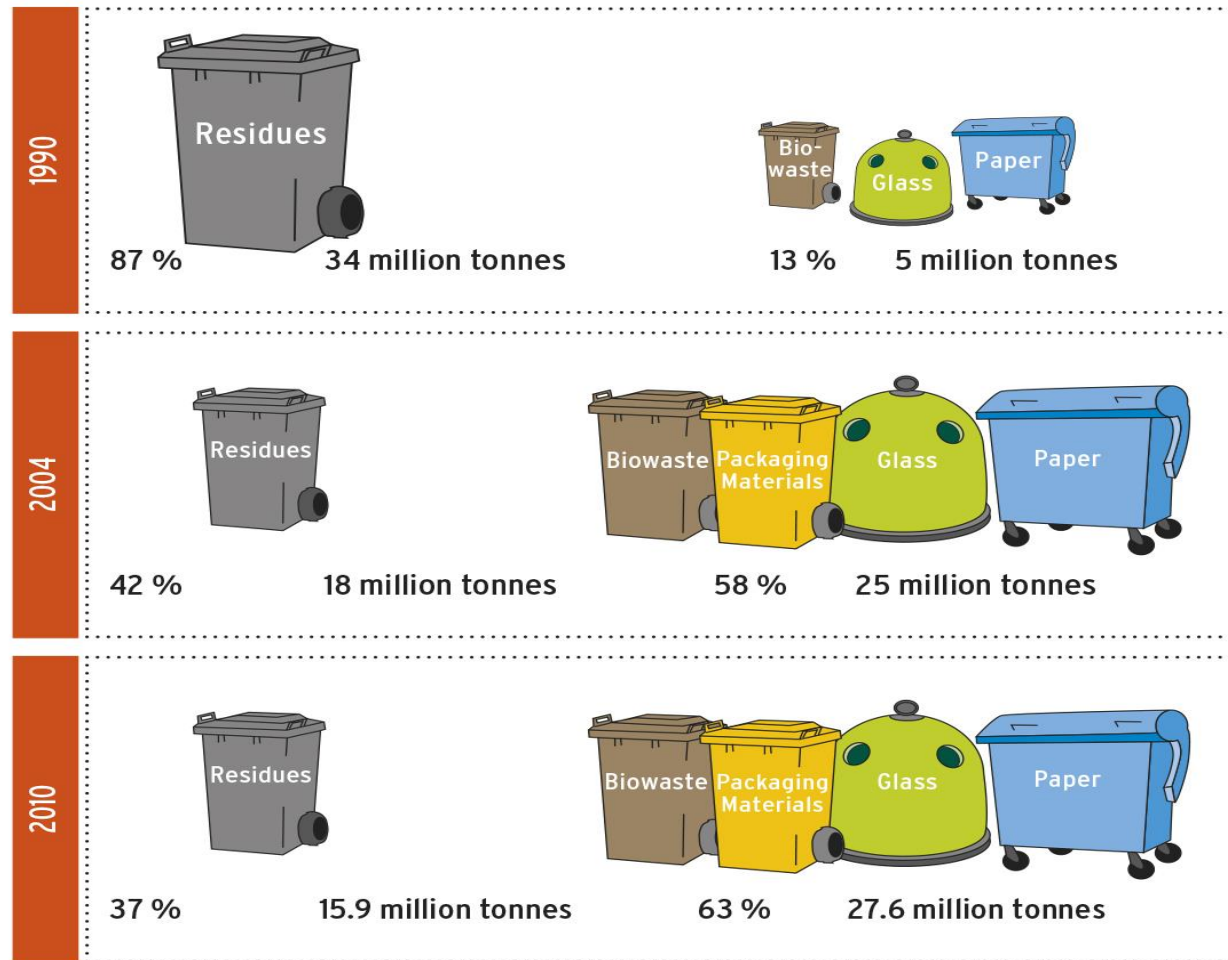
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II. German waste legislation – some guiding principles and provisions

Circular Economy Act of 2012



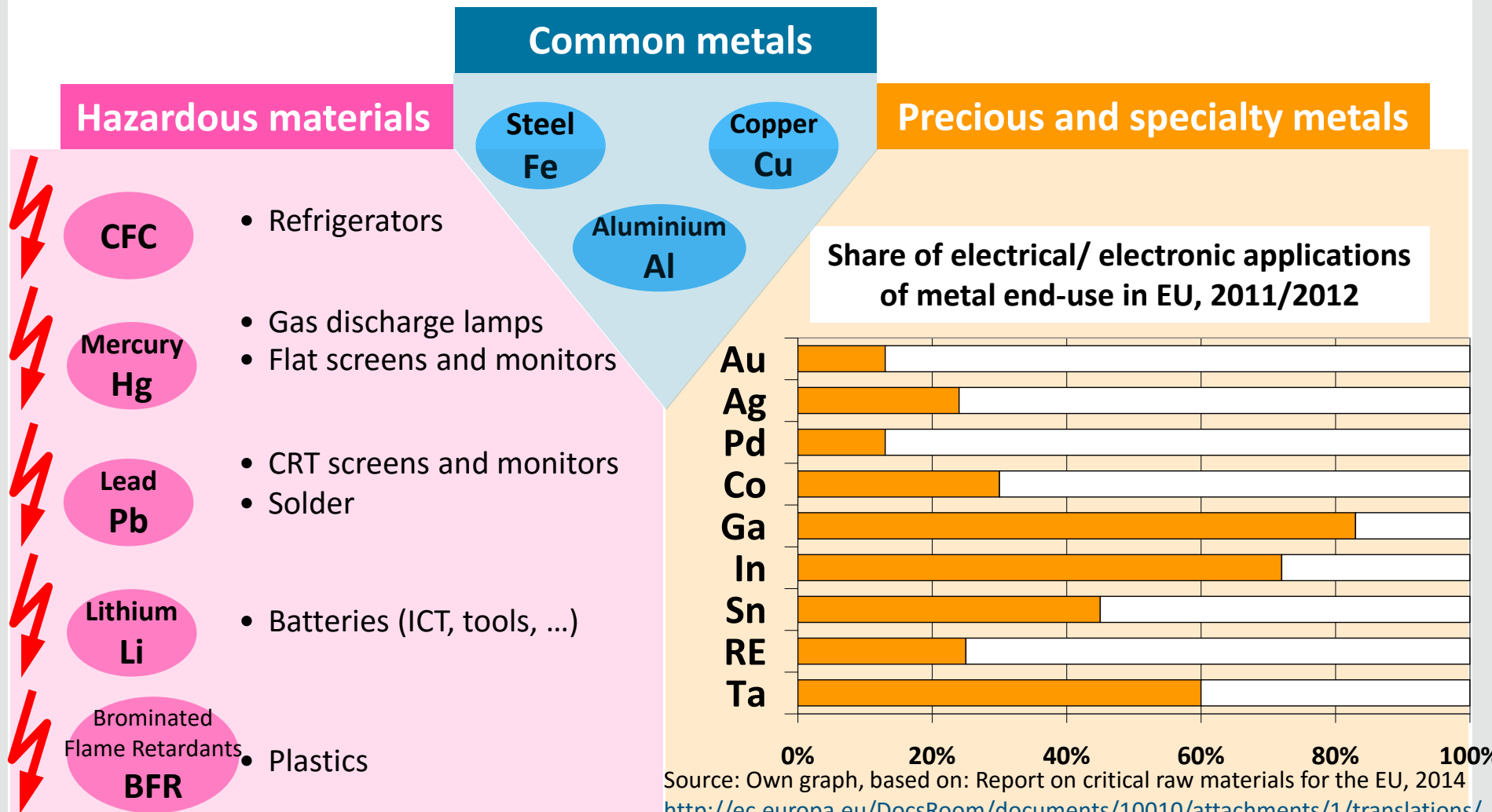
II. German waste since 2010: More recyclables than residual waste



Source: Federal Statistical Office (Statistisches Bundesamt) 2012, own calculations

III. Electrical and electronic equipment - relevant waste stream

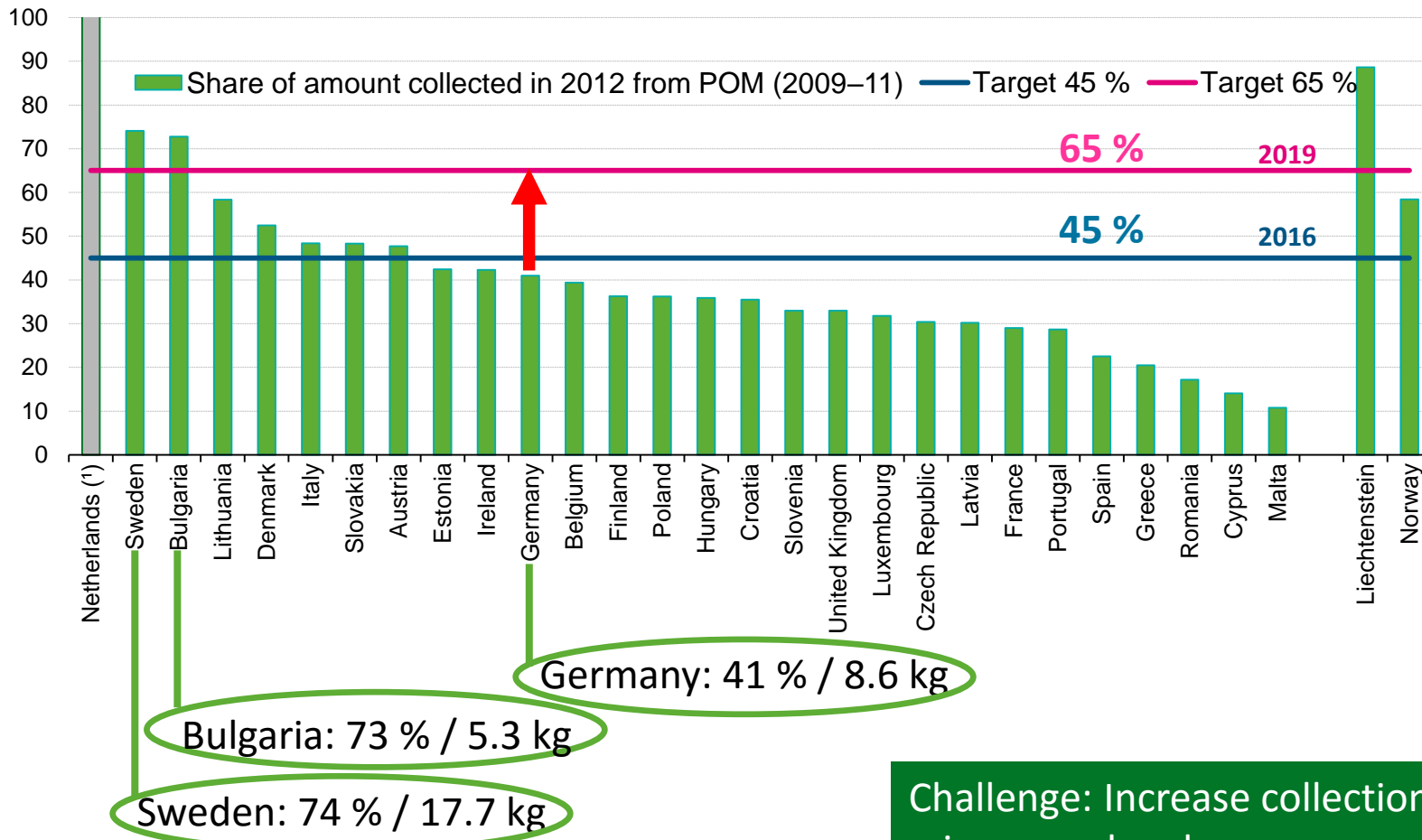
Relevance of WEEE recycling



Source: Own graph, based on: Report on critical raw materials for the EU, 2014
<http://ec.europa.eu/DocsRoom/documents/10010/attachments/1/translations/en/renditions/native>

IIIa. Current challenge: Improve WEEE collection

WEEE Collection Rates 2012 in EU, in %



Challenge: Increase collection of WEEE

- in general and
- with precious and specialty metals

Source: Eurostat (online data code: env_waselee) http://ec.europa.eu/eurostat/statistics-explained/index.php/Waste_statistics_-_electrical_and_electronic_equipment

(*) Data for the Netherlands collected in number until 2011.

IIIa. WEEE collection in Germany – today and future outlook

1. Municipalities

- Today: Obligation: Free take back at municipal collection points
- Prospects: Voluntarily: Increase number of collection points and opening hours

2. Distributors

- Today: Voluntary collection
- As of July 2016: Collection obligation for large retail shops > 400 m² (for small WEEE, and 1:1 for all WEEE)

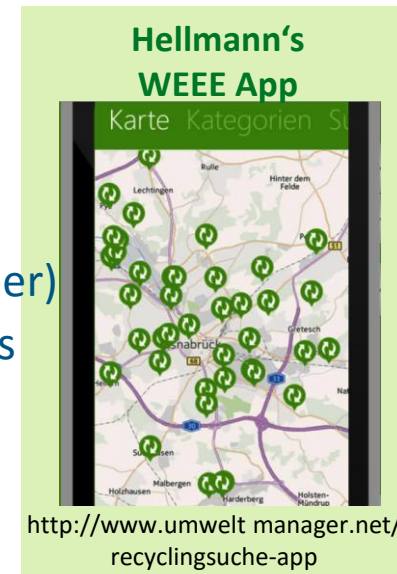
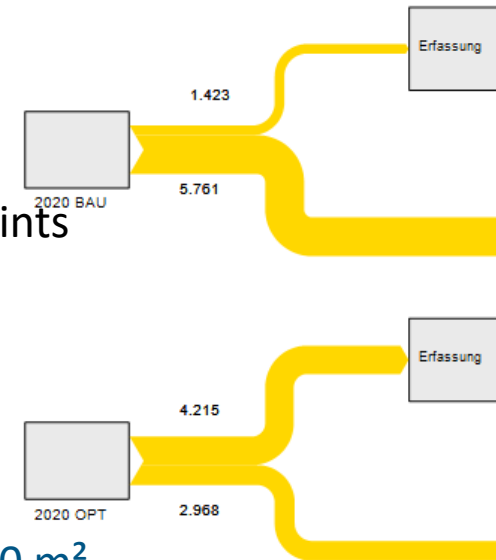
3. Producers

- Today and prospects: Voluntary collection (e.g. mobile phones)

Collection groups

- Today: 5 collection groups
- As of February 2016: 6 collection groups (convenience for consumer)
- Prospects: Separation of WEEE with hazardous and critical materials as first step of WEEE treatment

Communication, public relation activities



IIIa. Current collection challenge – lithium batteries

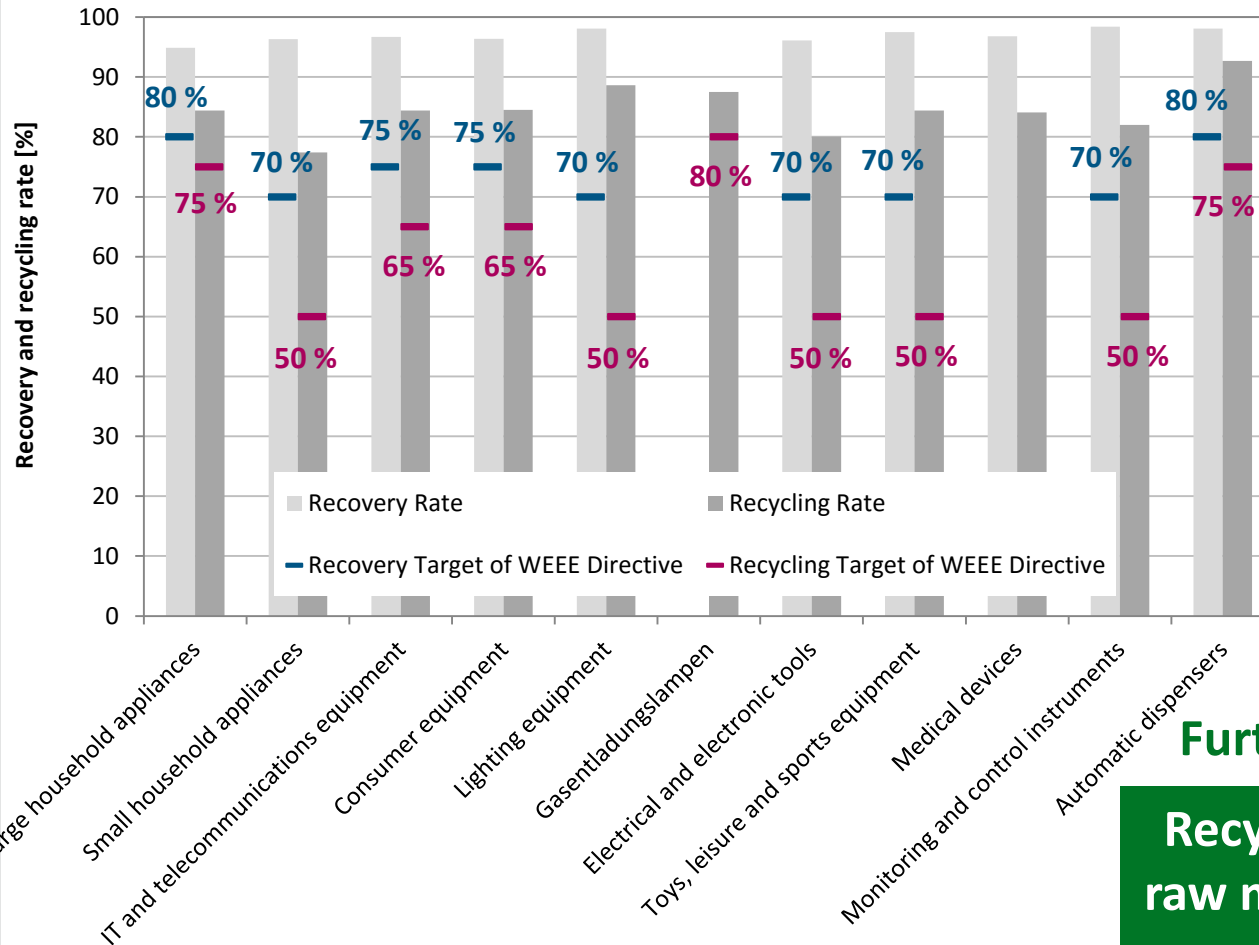
Collection and transport of WEEE containing lithium batteries

- Already fires during collection and on sites of treatment facilities
 - Processes of handling and transport can cause damage
 - Comply with international provisions on the carriage of dangerous goods (ADR)
- Change and adapt collection and transport processes to avoid risks



IIIb. WEEE treatment and recycling

Recycling and recovery rates per WEEE category in Germany in 2010



- Until 2014:
All recycling and recovery targets met
- As of October 2015:
Recycling and recovery targets
- include reuse
- increased by +5 %
(except for lamps)

Further treatment objectives

Recycling of raw materials

Separation of hazardous materials

Source: UBA – Daten zur Umwelt

IIIb. WEEE treatment – Hazardous materials

Separation of hazardous components and materials

- PCB containing capacitors
- Batteries
- Plastics containing brominated flame retardants
- Mercury containing components (e.g. switches, backlight of notebook)
- CFC, HFC, hydrocarbons
- Printed circuit boards
- Toner cartridges
- Removal of fluids

Specific treatment routes

- Gas discharge lamps
- TV screens and monitors (LCD and CRT)
- Refrigerators
- Photovoltaic panels

IIIb. Treatment of refrigerators

- Still more than 50% of the waste refrigerators in Germany contain CFCs
→ substances depleting the ozone layer and greenhouse gases
- Avoid diffuse emissions of CFCs during treatment
- combined treatment: CFC and VOC appliances
 - CFC appliances: leak tightness
 - VOC appliances: fire hazard

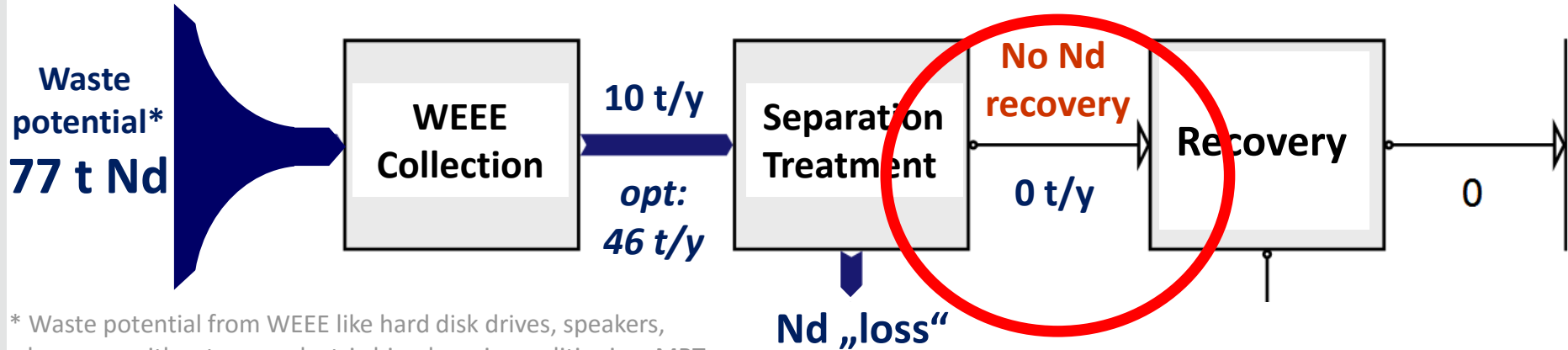


Source: own photograph

IIIb. Current treatment challenge – Specialty metals

Example: Recovery of neodymium

Estimated neodymium (Nd) waste flows from WEEE in 2020 in Germany
(scenario: business as usual)



* Waste potential from WEEE like hard disk drives, speakers, however without, e.g., electric bicycles, air conditioning, MRT

Dual approach to initiate and establish recycling of selected specialty metals

1. aim: Provide input for recovery

- Separation requirements.
- Pooling of similar waste streams.
- Interim storage to aggregate relevant mass for recovery.



2. aim: Stimulate investment in recovery plants

- Subsidies for research and development in process development.
- Protect against risk of investment.

Current Challenges – Theft and illegal exports

- Data: No statistics on illegal activities available, number unknown
- In practice: „Collection“ especially in front of municipal collection sites and just before municipal collections on the streets

New WEEE legislation (EU and Germany)

- Minimum requirements for shipments
- Proof that a used EEE and not WEEE is shipped (bill, contract)
- Record on evidence of testing
- Appropriate protection against damage during transportation



Source: own photograph

Standards and standardisation – UBA activities

German level

ElektroG

(national transposition of WEEE-Directive) →
Selective Treatment requirements

Treatment Ordinance

to concretize the requirements
of ElektroG

LAGA-Leaflet M31

on the sound collection and
treatment of WEEE

Technical Instructions on Air Quality

(TA Luft) on the treatment of refrigerators

VDI-standard 2292 on the sound treatment of
refrigerators

UBA- Activities

European level

WEEE-Directive – Annex VII

Adaptation of selective
treatments requirements

Waste Treatment-BREF

BAT treatment requirements
for refrigerators

CENELEC-series

based on Art. 8 of WEEE-Directive
Several Standards and Technical
Specifications
→ general requirements and
→ specific requirements for certain
WEEE as lamps, refrigerators,
photovoltaic modules

Summary

- Importance of resource efficiency
- Circular economy based on 5 step waste hierarchy
- WEEE relevant due to
 - Common metals
 - Hazardous materials
 - Precious and specialty metals
- Collection target 2019: 65 %
 - Improve WEEE collection
- WEEE treatment
 - Recycling and recovery targets
 - Proper separation of hazardous materials
 - Increase resource efficiency and recovery of precious and specialty metals

Thank you for your attention!

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<http://www.umweltbundesamt.de/en/topics/waste-resources/product-stewardship-waste-management/electrical-electronic-waste>